



# UNITED STATES PATENT AND TRADEMARK OFFICE

*len*

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.     | CONFIRMATION NO.       |
|---|-------------|----------------------|-------------------------|------------------------|
| 10/507,508  | 08/19/2005  | Steffen Seeber       | U194US(PCT)             | 6416                   |
| 20469   | 7590        | 11/20/2007           |                         |                        |
| KOHLER SCHMID MOEBUS<br>RUPPMANNSTRASSE 27<br>D-70565 STUTTGART,<br>GERMANY |             |                      | EXAMINER<br>YUN, JURIE  |                        |
|   |             |                      | ART UNIT<br>2882        | PAPER NUMBER           |
|   |             |                      | MAIL DATE<br>11/20/2007 | DELIVERY MODE<br>PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/507,508

Applicant(s)

SEEBER ET AL.

Examiner

Jurie Yun

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

1) ☒ Responsive to communication(s) filed on 19 August 2005.

2a) ☐ This action is **FINAL**.

2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

4) ☒ Claim(s) 30-58 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

6) ☒ Claim(s) 30-35, 39-41 and 43-58 is/are rejected.

7) ☒ Claim(s) 36-38 and 42 is/are objected to.

8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on 13 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All b) ☐ Some \* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 9/13/04.

4) ☐ Interview Summary (PTO-413)

Paper No(s)/Mail Date. \_\_\_\_\_.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. The preliminary amendment filed 9/13/04 has been entered.

#### ***Claim Objections***

2. Claims 30, 44, 46, and 57 are objected to because of the following informalities: they each recite, in part, "in particular...". The phrase "in particular" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d). Appropriate correction is required.
3. Claim 49 is objected to because of the following informalities: there appears to be a typo in line 2 where "and" should perhaps be "an". Appropriate correction is required.
4. Claim 55 is objected to because of the following informalities: it appears as though claim 55 should depend on claim 49, because there is lack of antecedence for "said shielding collimator". Appropriate correction is required.
5. Claim 57 is objected to because of the following informalities: the claim should end with a period ".". Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 30-35, 39-41, and 43-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Span et al. (USPN 5,012,506).

8. With respect to claims 30, 32, 33, 44-46, and 57, Span et al. disclose an irradiation device, in particular for conformation irradiation, the device comprising: means for delimiting (located in protective outer casing - 12) a high-energy beam emitted by an irradiation source (X-ray source - 10), said delimiting means having a multi-leaf collimator comprising a plurality of mutually opposite leaves (see Fig. 4) which can be brought into a beam path via drives such that a contour of the beam path can be shaped in accordance with a volume to be irradiated, said delimiting means also comprising a further shielding (30 & 31 & 35 & 36) for delimiting a path of the high-energy beam, wherein the leaves of the shielding comprise a beam-absorbing material of appropriate thickness only in a region which can enter into a path of the high-energy beam (column 6, lines 49-54 & column 7, lines 34-38). Span et al. teach the inner end portion of the leaves of the shielding are formed of tungsten, while, with less expense, the remainder of the leaf can be made of lead retained in a steel spine or framework. Span et al. do not specifically disclose each of said leaves of the multi-leaf collimator comprises a beam-absorbing material of appropriate thickness only in a region which can enter into a path of the high-energy beam and which is not shielded by said further shielding for all possible adjustment positions. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply this to the leaves of the multi-leaf collimator, to save money, as taught by Span et al.

9. With respect to claim 34, Span et al. do not specifically disclose the beam-absorbing material is joined to said other material such that, in a front position of the leaf, said other material is still slightly outside of an outermost possible delimitation of

the high-energy beam. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to do this, to ensure patient safety.

10. With respect to claim 35, Span et al. disclose said beam-absorbing material is joined to said other material (column 6, lines 49-54 & column 7, lines 34-38), but do not disclose thereby forming angles. However, Span et al. are capable of having the beam-absorbing material joined to the other material, thereby forming angles. It would have been obvious to one of ordinary skill in the art at the time the invention was made to do this, for more stability. It is noted that while features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function alone. See MPEP 2114. In this case, it should be recognized that the wherein claim is functional in nature and does not distinguish structurally the instant claim over the prior art. See MPEP 2114 and 2111.04.

11. With respect to claims 39-41, Span et al. do not disclose said beam-absorbing material and said other material are soldered together, wherein the leaf is produced through separation from a block which is designed like the leaf, but has a multiple width thereof, and wherein said beam-absorbing material and said other material are glued together. However, the method of forming a device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

12. With respect to claim 43, Span et al. disclose said other material has openings (for rollers and rails - 43 & 44).

13. With respect to claim 47, Span et al. disclose shielding (16) is disposed in front of said multi-leaf collimator (17). Span et al. do not disclose said further shielding is disposed in front of said multi-leaf collimator, but it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the shielding - 16 with the shielding - 30 & 31 & 35 & 36, to enable more diverse applications.

14. With respect to claim 48, Span et al. disclose said further shielding (30 & 31 & 35 & 36) is disposed behind said multi-leaf collimator (17).

15. With respect to claim 49, Span et al. disclose said further shielding (30 & 31 & 35 & 36) is a shielding collimator having an adjustable opening.

16. With respect to claim 50, Span et al. disclose said shielding collimator (30 & 31 & 35 & 36) comprises two radiation delimiting elements which can be brought into different positions.

17. With respect to claim 51, Span et al. do not specifically disclose said radiation delimiting elements (30 & 31 & 35 & 36) comprise beam-absorbing material of corresponding thickness only in a region which can enter into a path of the high-energy beam collimator at all possible adjustment positions of said shielding collimator.

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to do this, to ensure patient safety.

18. With respect to claim 52, Span et al. do not specifically disclose dimensions of regions of said leaves are determined by maximum possible mechanical adjustment motions thereof. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to do this, to ensure patient safety.

19. With respect to claim 53, Span et al. do not specifically disclose dimensions of regions of said leaves are determined by a maximum mechanical opening of said shielding collimator. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to do this, to ensure patient safety.

20. With respect to claim 54, Span et al. do not specifically disclose dimensions of regions of said leaves are determined on a basis of a possible adjustment motions of said leaves as delimited by control technology. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to do this, to ensure patient safety.

21. With respect to claim 55, Span et al. do not specifically disclose dimensions of regions of said leaves are determined by adjustment motions of said shielding collimator as delimited through control technology. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to do this, to ensure patient safety.

22. With respect to claims 31, 56, and 58, Span et al. disclose each of said leaves comprises an other region, said other region consisting essentially of an other material having a lower specific weight than said beam-absorbing material and also having good mechanical properties (column 6, lines 49-54 & column 7, lines 34-38). Span et al. do not specifically disclose said other region does not absorb the beam, but it would have been obvious to one of ordinary skill in the art at the time the invention was made to do this, to ensure patient safety.

***Allowable Subject Matter***

23. Claims 36-38 and 42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter:

Prior art fails to disclose a leaf for a multi-leaf collimator comprising a beam-absorbing material, wherein said beam-absorbing material is introduced into a recess in said other material such that said beam-absorbing material is surrounded by said other material at three sides, as claimed in claim 36. Claims 37, 38, and 42 are allowable due to their dependency on claim 36.

***Conclusion***

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jurie Yun whose telephone number is 571 272-2497. The examiner can normally be reached on Monday-Friday 8:30-5:00pm.

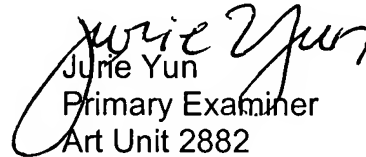
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on 571 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Application/Control Number:  
10/507,508  
Art Unit: 2882

Page 8

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Julie Yun  
Primary Examiner  
Art Unit 2882

November 14, 2007